# **CG PLUS** (Rev. 1.0 ENG)



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#### 1 INTRODUCTION

Congratulations on your purchase of Axel Digital Logo Generator, the broadcasting graphic device server.

#### 1.1 WHAT IS THE DIGITAL LOGO GENERATOR?

Axel CG Plus is a software-based solution for multichannel logo generation. It works with BlackMagicDeckLink video boards and allows you to broadcast on 1 or 2 channels simultaneously and it supports any video resolution (from SD to 4K).

For each channel, CG Plus provides up to 15 different templates and a blank one customizable with a user-friendly Composer. The operator could add from static logos to dynamic swf files or animated png and tga sequences.

#### 1.2 WHY DIGITAL LOGO GENERATOR?

CG Plus is ideal for displaying graphical contents such as text, logos and animations, crawls, tickers and rolls with dynamic contents/metadata retrieved from external data sources, like RSS, txt, Microsoft Excel files and more. Top broadcast quality and ease of use allow CG Plus to be used also for live production in talk shows, sports and entertainment.

- 4K/HD/SD static and animated graphics and logos;
- Anti-aliased text with gradients, borders and shadows;
- Fully customisable Main GUI with sizeable/dockable panels for Video Preview, Video Program, Page buttons, Live data tags, Playlists, etc;
- Four different layouts available for engine control;
- Clock, count up/down, date, crawl, ticker and roll;
- Template editor with multiple layers;
- Preview channel over VGA and SDI/NDI;
- TGA, BMP, PNG, TIF, JPG bitmap sequences;
- Smooth IN/OUT transition: fade, move, zoom;
- 32 Bit image processing with alpha and transparencies;
- Style templates for text, crawls and tickers;
- Background rendering for Adobe After effects projects with live data tags;
- MOS protocol for integration with NRCS News Room Control Systems certified on most popular NRCS manufacturers;
- GPI triggers;
- Elgato StreamDeck layouts;
- REST API commands for complete remote control;
- Effects: shadow, blur, motion blur, smooth edge (deflicker);
- Internal key mode (video in video out) or external key mode (Key and fill outputs);
- Audio output over SDI/NDI in external key mode;
- Infinite layers on each page;
- Customizable shortcuts for each page;
- Safe area on page composer;
- Checkered background on page composer for transparencies highlight;
- On the fly text and media change from user lists;
- UNICODE texts with double byte language support;
- Right to left language support;
- Automatic text size adaptation to areas;
- TTF fonts support;
- Top/bottom/left/right/middle text alignment;
- Text foreground, border and background with 10 points color and alpha gradients with custom angle;
- Custom indentation for precise background alignment;
- Fade in/out, move left/right/top/bottom, squeeze X/Y/XY transitions;
- Shadows with color, offset and blur which follow animation alpha;
- Video file animations in bitmap sequences, GIF, QuickTime ANIM and Prores 4:4:4:4;

- Video files import in DV, HDV, DVCPRO, MJPEG, MPEG-2, TS, MPG, VOB, H.264, H.265, etc;
- AV1, MP4, QuickTime, PRORES, DNxHD, AVI, WMV, ASF, MXF, XDCAM, IMX, GXF, LXF, FLV, MKV, WebM, HuffYUV, VP8, VC3, JPEG2000, DPX, etc;
- Animations and video files in loop/stop at end/ stop at end and hide modes;
- Automatic upscale/downscale of media as background;
- Media on background outputs audio in external key mode;
- Smooth crawls with area and speed selection;
- Text, Crawl, roll and ticker data source from text, CSV, RSS and excel files;
- Automatic update of graphics on data source change;
- Excel file support of font, front/back color, alignment and hyperlinks to media;
- Smooth tickers with number of lines, timing and transition type;
- Multiple shapes with color gradients, outlines and rounded corners;
- Date and clock with customizable formatting;
- Object layering with priority management;
- As run logs database with queries;
- Object grouping with timing for entry and duration;
- EAS (Emergency Alert System) messaging on crawls.

### 2 HARDWARE SETTINGS

Supported Video Cards: Blackmagic Design DeckLink and Intensity, AJA Corvid, Bluefish

Resolutions: SD, HD, 2K, 4K (depending on AV card)

Simultaneous NDI output (up to 4 channels)

Preview output on SDI (depending on AV card) and NDI

External key mode in SDI with fill and key outputs (depending on AV card)

Internal key mode with SDI input and output (depending on AV card)

Up to 16 Audio channels (not available in internal key mode)

Fast GPU not mandatory, but suggested (Nvidia/AMD)

EAS messages with external receiver on RS232 (not included)

Compatible Windows 10/11 and Windows Server OS

Triggers/GPI with MOXA iologik, JLCooper GPI, Rs-232, Novation Ableton, Elgato StreamDeck (not included)

#### SUGGESTED REQUIREMENTS

- I7 12700K CPU
- Windows 11
- 16GB RAM
- NVidia GTX
- Decklink Duo 2 (up to 2 channels external/internal key in HD)

### 3 CONFIGURATION

CG Plus configuration requires only the manual insertion of a standard format for the video card installed on your PC. The program automatically will set the format for all the available output channels.

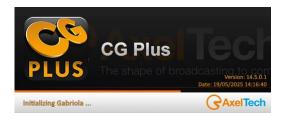
After that, you can set up a different format to suit your needs for each channel.

For each detected Channel, the program will automatically prepare 5 output pages, each one with a different graphic layout, plus 1 blank page.

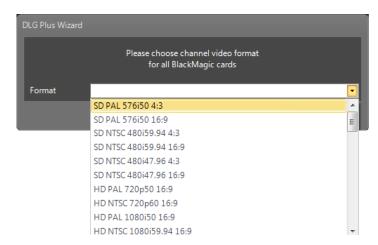
The user can add, edit or delete any object for each page at any time.

#### 3.1 RUN THE PROGRAM

Please, start the "CGPlusSetup.exe" file:



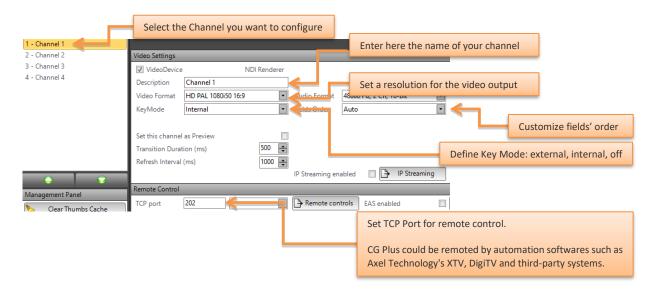
Now, you must choose a video format from the list:



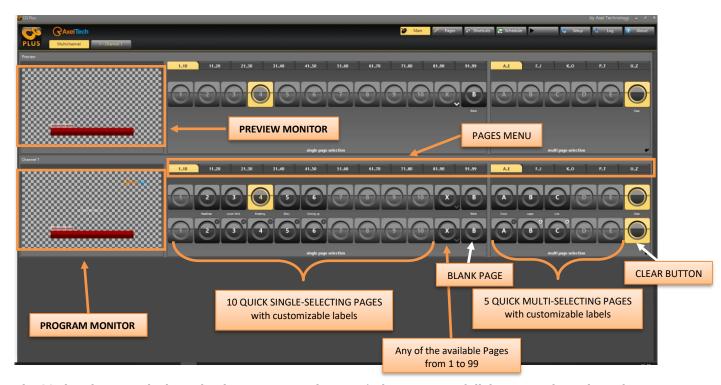
After that, click on "OK" button and wait until the program finishes to set all the necessary configurations. When CG Plus configuration has finished, the main program screen will appear.

#### 3.2 VIDEO OUTPUT - MAIN SETTINGS

To set the video output for the single Channel, open the program Setup from the top menu



#### 3.3 PLAYOUT - MULTICHANNEL



The CG Plus Playout Multichannel is the starting page layout. It's the summary of all the output channels set during the configuration. You will see all the supported video board's available channels.

#### **CHANNEL**

- •For each channel you can choose from a set of 10 pages for the Program channel and 10 pages for the Preview channel; a "blank page" button allows you to remove the current page from the air, and a special button (X) allows you to quickly recall any of the saved pages from 1 to 99.
- •Above the page buttons, a tab menu allows you to select a specific set of pages.

To change the Channel graphics, simply click on one of the available pages you want to send to output.

- •5 more Pages are provided, each identified by a letter (uppercase or lowercase). Unlike the Pages identified with a number, the "letter" Pages are not exclusive: they can be used on air simultaneously. Click on one or more buttons to add these Pages to the current graphics. Click on the same button to remove the related Page on the air. A CLEAR button allows you to simultaneously remove all active "letter" Pages.
- •The Preview channel choice is exclusive: only one Preview Channel is allowed.
- •At any time, you can see the status of each output Channel.

# 3.4 PLAYOUT - SINGLE CHANNEL

In addition to the Multichannel view, you can select each individual Channel and use different layouts for the interface.

Each view shows the current graphic in the Preview and in the selected output Channel (Program).



The panels of each layout can be resized, moved and undocked to create new layouts that can be saved and added to the list of existing ones.

#### 3.4.1 CLASSIC LAYOUT



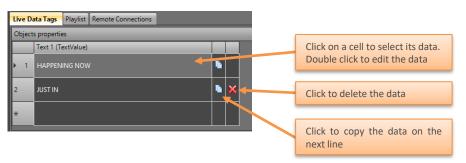
This is the default layout. The page selection works in the same way as in the Multichannel view.

Also try switching between the different layouts in the menu to find the one that best suits your needs.

#### LIVE DATA TAGS

At the bottom of the layout there is the **Live Data Tags** tab which allows you to select, edit, add and delete in real time some data (Text and Media) of the items in a given Page before broadcasting it.

Once you select the Live Data Tags tab, click on a Page on the Preview row to show them.



If you don't want to change the Preview Page, but you want to work on the data of another Page, click on the small gear icon of the related button.



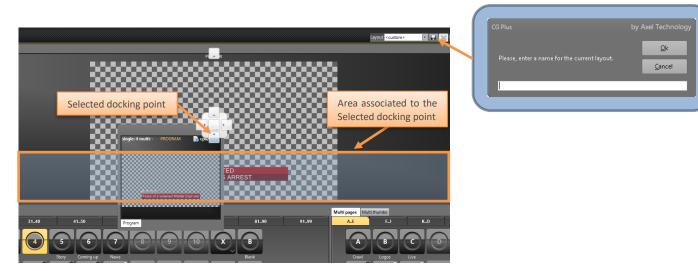
For LIVE DATA editing, see next chapter.

#### 3.4.2 CUSTOM LAYOUT

Starting from a default Layout, try to drag and drop the borders of each panel to resize it, or select a tab and drag it to undock it from the Layout, then move it in a new position by dragging it to one of the docking points that appear on the screen.

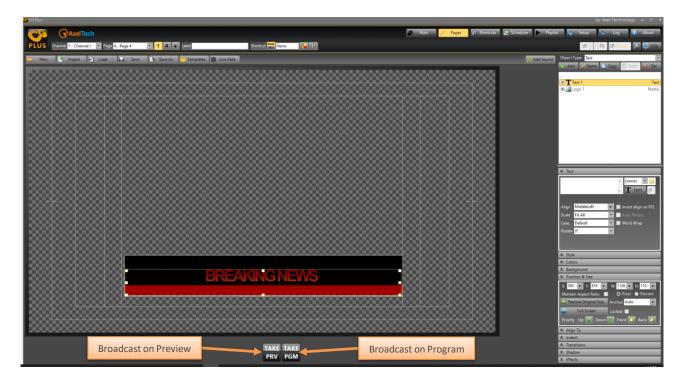
You can also leave one or more panels undocked and position them wherever you like. For example, if you have a dual-monitor PC, you could undock the PROGRAM panel and place it on the second monitor in full screen mode.

When you're editing a Layout, it will be named <custom> until you select another Layout from the menu. If you want to save a modified Layout, click the "save" button next to the menu and a window will appear where you can enter a name for the new Layout.



If you want to delete one of the custom Layouts you have saved, select it from the Layout menu and click on the **X** icon. A pop-up window will appear to confirm the operation.

#### 3.5 COMPOSER

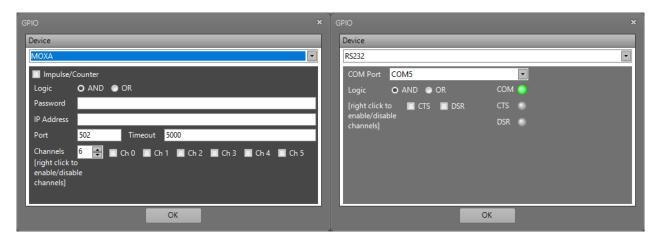


The Composer section is used to create and edit the output Pages for each Channel.

You can also directly broadcast, on Preview or Program, a Page being edited even before saving it, simply by clicking on the **TAKE PRV** and **TAKE PGM** buttons.



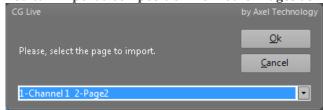
- 1 Select one of the available Channels.
- Select the Page you want to modify. Use the buttons to switch from single-selecting pages (1) to multi-selecting pages (A or a).
- 3 Assign a name to the selected Page.
- 4 You can add a key combination to recall the Page from the keyboard when you are on the "Main" section.
- 5 You can set a GPIO device to select the Page. CG Plus accepts commands from different devices such as MOXA boards and RS232 commands:



Any changes to the Page can be undone using the "UNDO" function or saved by the "SAVE" one. In addition, you can see real-time changes to the Page without saving using the "TAKE PRV" and "TAKE PGM" buttons.

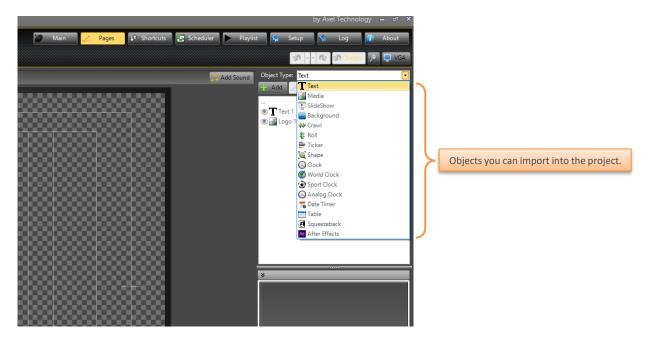


- 1 Removes all the objects from the Page. A pop-up window will appear to confirm the operation.
- You can import a composition from other Pages using a quick selection menu



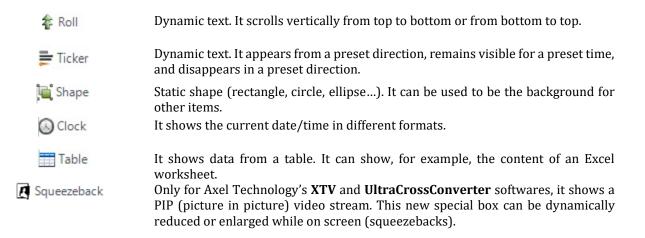
- 3 Imports Axel Cg File (\*.acg), for example a Page that have been edited and exported previously.
- 4 Saves the changes to the current Page.
- This allows you to export the Page project for a backup copy or to use it into another CG Plus machine

### **3.5.1** *OBJECT TYPE*



Below is a list of the main objects that you can insert into the Page project:

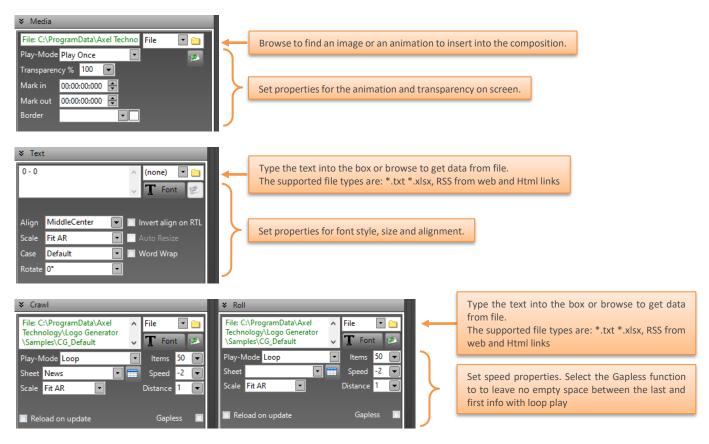
OBJECT	DESCRIPTION
<b>T</b> Text	Static Text
Media	Static or dynamic picture (e.g.: your TV Station logo). You can use almost any kind of format for the images, .MOV or PNG sequences for the animations
戻 SlideShow	Sequence of images
Background	Static full screen picture used as a background.
Crawl	Dynamic text. It scrolls horizontally from left to right or from right to left.

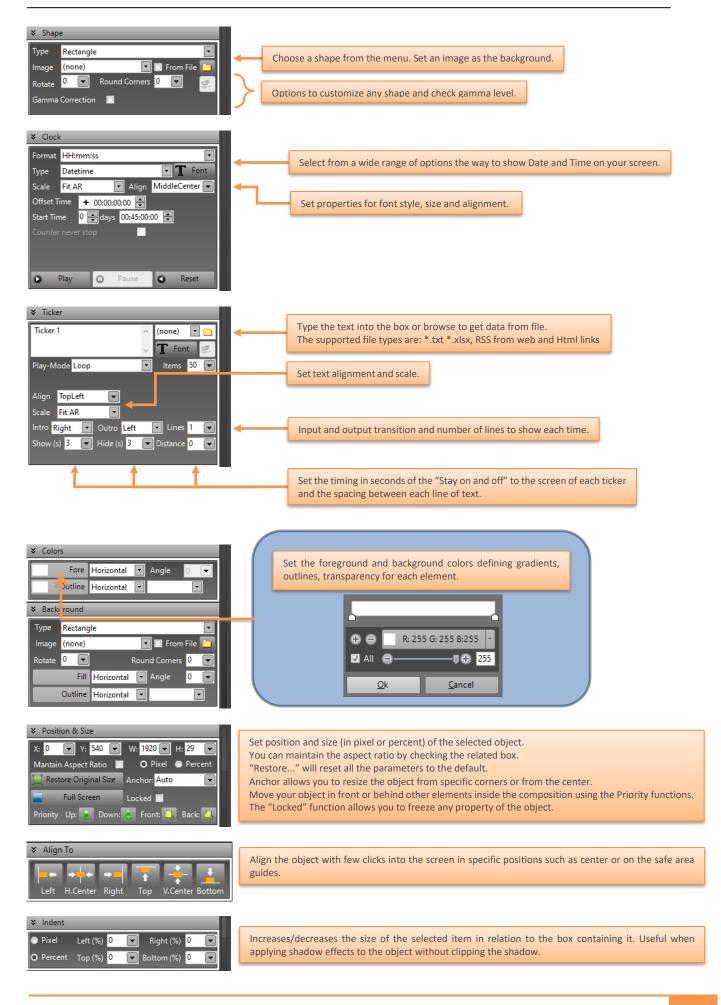


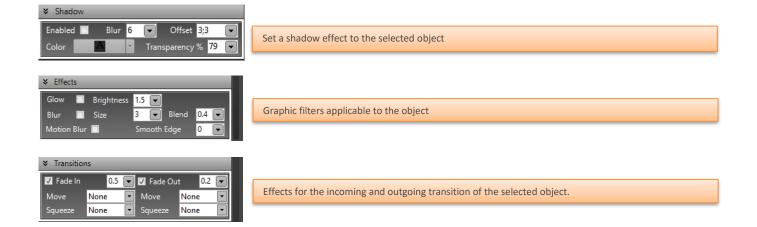
After inserting an object into the page, you can surf in the Properties menu on the right side of the screen to customize the object's appearance and behavior:



Below, an overview of the most common parameters for each object:

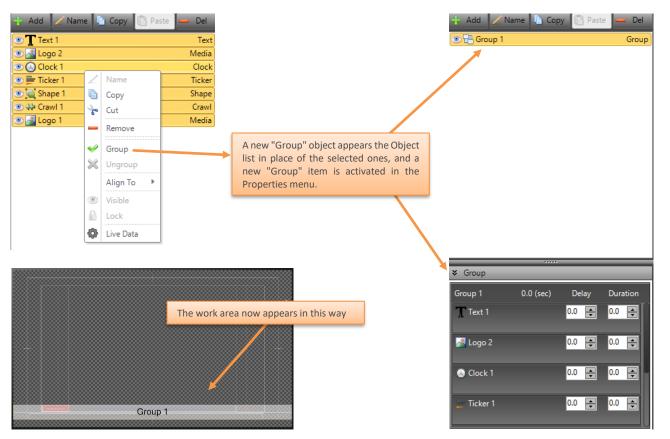






#### 3.5.2 *GROUPS*

By default, when you broadcast a graphic project, all the objects that make up the Page appear on screen at the same time, and they remain visible until the page is removed from the broadcast. It is, however, possible to assign a different timing to each object: to do this, you have to select two or more objects into the list, right-click on the selection and select "Group" from the menu that appears.



Now, for each object belonging to the group, it is possible to set a Delay and Duration value for its display on the screen.

You can group objects as you like and assign different Delays and Durations to each Group. Also, when in *Group* mode, you can move the objects in the working area at the same time.

To work on the Properties of the objects contained in a Group, double-click on the Group object in the list to expand the selection. Double-click the "..." icon at the top of the list when you want to return to the Groups view.

#### 3.5.3 ADOBE AFTER EFFECTS INTEGRATION

When you need the power of Adobe After Effects to create the most amazing graphics, you can take advantage of CG Plus Background Renderer.

Simply import the AE project (\*.aep) into the Composer, position it on the screen, and CG Plus will use the AE Render command line (installed separately) to generate an animated proxy file for previewing.

If the project contains editable data tags for text, bitmaps, or animations, they can be changed on the fly using LIVE DATA TAGS, triggering the background renderer automatically.

Rendering time depends on system resources and AE project complexity.

#### 3.5.4 CG COMPOSER

CG Plus can be supplied with free-to-use software, called **CG Composer**, which allows you to install on other PCs the same working environment as the internal Composer and therefore to create complete graphic projects that can be exported to a .acg file and imported as a page within CG Plus.

#### 3.6 SHORTCUTS

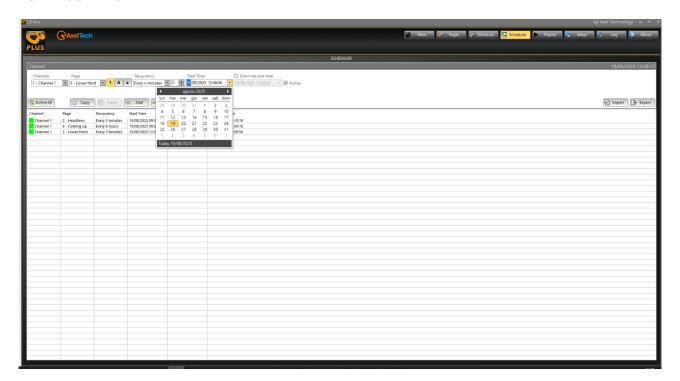


Here you can assign keyboard or GPIO shortcuts to load any Page on the PROGRAM or the PREVIEW Channel, or to some of the main actions such as TAKE PGM or BLANK PAGE.

To assign a keyboard shortcut, double-click in the "Shortcut" field of the Page row and hold down the keys you want to associate (example: Ctrl+F1).

To assign a GPIO shortcut, double-click in the "GPIO" field of the Page row, select the GPIO device you are using and associate a contact to the Page.

# 3.7 SCHEDULER



The Scheduler section allows the user to set a specific playout timing for each Page, assigning each a start and end date and time, and a possible recurrency.

## 3.8 PLAYLIST



#### 3.9 SETUP



In the left menu of the Setup page, you can choose the channels order by clicking on "Up" and "Down" buttons. At the bottom of the left menu, the Management panel:

- **Clear all the pages** deletes all the pages composed for that channel. WARNING: You will lose all your project!
- Clear Thumbs Cache deletes all the thumbnails stored into the cache memory
- **Scan for Video Devices** will scan your system to find new video devices that could be used by CG Plus.
- **Wizard** runs a step-by-step configuration of the system up to your requests.

In the rest of the Setup page you can change the properties of the selected channel.

#### 3.9.1 VIDEO SETTINGS

- •VideoDevice: select it to activate the channel. User can uncheck this property if the channel is not enabled.
- •Description: the channel's user description. User can distinguish any channel from the others by setting this property.
- •Format: the channel's resolution and aspect ratio. User can choose from all the supported format video resolution.
- •KeyMode: the channel's output mode. User can choose among off, internal or external mode.
- Fields Order: the channel's fields order. User can choose between Auto, First Field, Second Field or Progressive order.
- •Set this channel as Preview: the User can choose to set the selected channel to be the preview channel. ATTENTION: User can also choose to set all the available channels with no preview. Automatically a virtual VGA channel will be created as a preview channel.

#### 3.9.2 REMOTE CONTROL

Users can set the TCP/IP port to wait for remote commands from other softwares such as Axel DigiTV and SocialHub.

#### 3.9.3 AXEL KEYBOARD SETTINGS

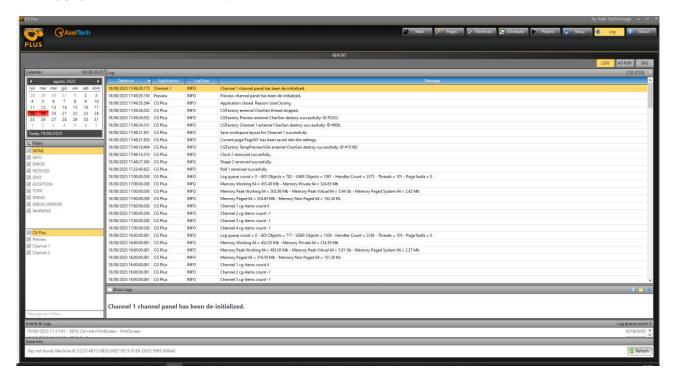
- •Use left Axel Keyboard shortcuts: it specifies whether the user can use, for the selected channel, the left keyboard of the Axel Keyboard commands shortcuts\*.
- •Use right Axel Keyboard shortcuts: it specifies whether the user can use, for the selected channel, the right keyboard of the Axel Keyboard commands shortcuts\*.
- \* Axel Keyboard similar type:



- •Save as project: exports all the pages composed for the specific channel into a collection saved in a single .acgs file.
- •Load project: imports all the pages or a specific one contained into a .acgs file.
- Apply Settings: click on it when you want to save the setup changes on the selected channel.

#### 3.10 LOG

The Log page is a section that allows you to overview all the saved CG Plus' user actions.

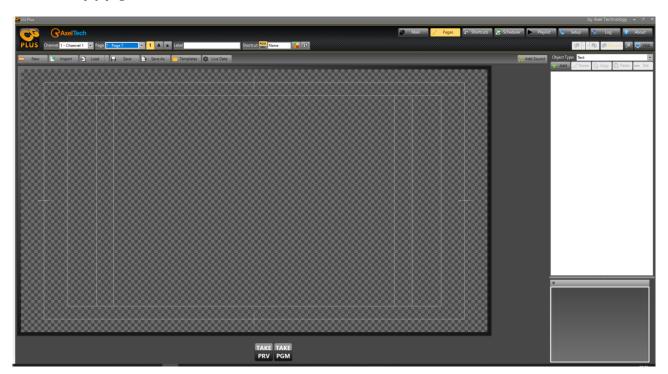


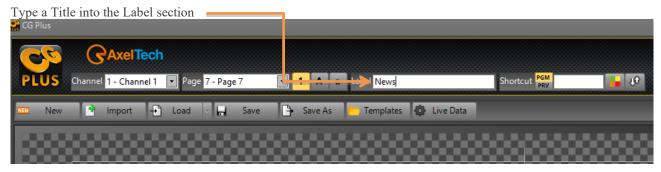
# 4 TUTORIAL

### 4.1 HOW TO CREATE A NEWS TEMPLATE.



# Select an empty page:





Into the object type menu, select "Shape" then press "Add" by Axel Technology — About

Playlist Setup Log About

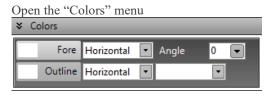
Discard VGA

Add Sound Object Type: Shape

Add V Name Copy Paste — Del

A white rectangle will appear in the composition area. Select it!

Special Control | Special Spec



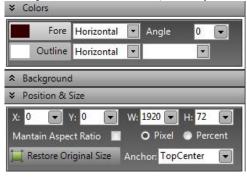




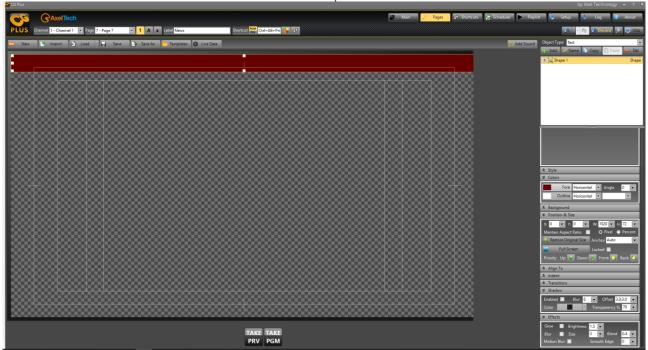
Then select "More Colors" and define our dark red!



Once you confirm the choice, set the position and the size inside the "Position & Size" box



This is the result of our first elements added into our new composition!



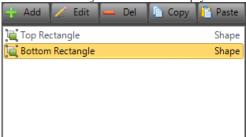
Select Shape 1 object, then use Copy and Paste functions to duplicate it



Press the "Name" button to customize the object's name.



Do it for both objects. This will help you to maintain the project well organized.



Then select the Align box and move the second rectangle to bottom.

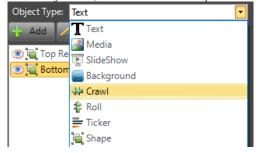


When you start pressing the button you will see the second rectangle moving down following the safe area guides.



The rectangle will be placed at the end of our screen.

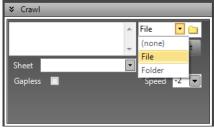
In the object list, select "Crawl" and press "Add"



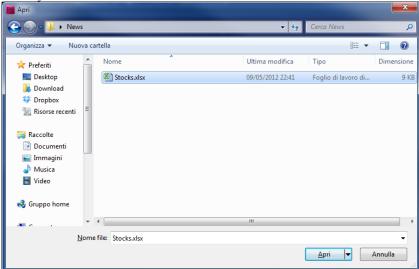
Go to your desktop and create a folder. Rename it as "NEWS".

Open excel and create a new file saving it as "Stocks.xlsx" inside your "NEWS" folder.

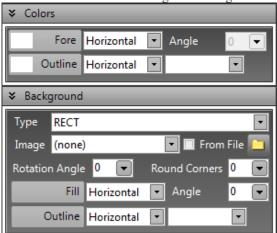
Return to CG Plus and the Crawl properties, we're going to select where we get the data from



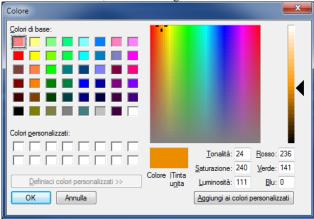
Select your "Stocks.xlsx" file



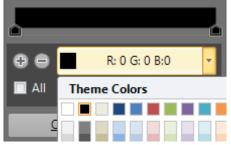
Set the color for text and background using the related boxes



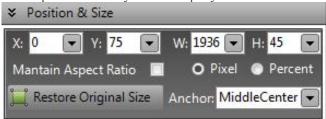
Like we did before, select "Foreground" and then "More Colors" and type the following parameters



Same for the background, choosing a simple black from the color preset palettes



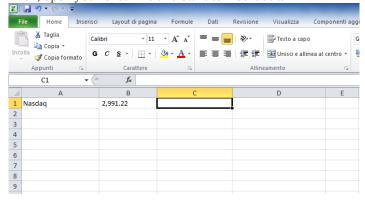
Set the position where you want to put your crawl



And this will be the result!



Then, open your excel file and start to insert data.



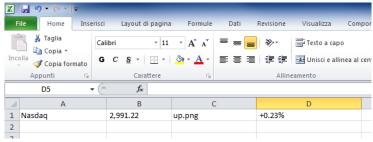
Each column will be filled with the value that will compose our crawl.

In the "C" column we are going to insert the image that will represent the trend (positive or negative) of our "Nasdaq".

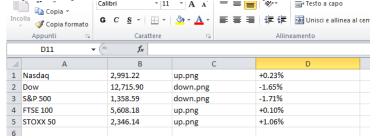
In the "NEWS" folder, save two \*.png images, one for the UP arrow and one for the DOWN arrow, that you can create with any graphic software (or find them on internet). The ones in the example are 355 x 426 pixel, CG Plus will take care to resize them inside the crawl.



Go back to Excel and write the file name and extension of your image into the C column, then type the value in the next column.



Repeat the process for all the rows on stocks you want to show on tv



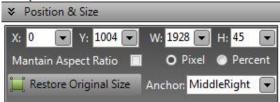
Save the Excel file, then in CG Plus press "Take PGM" o immediately broadcast the page with the information you just entered



Go back to Main and check the final result in the PROGRAM screen



Copy and Paste the "Crawl" object (like we did for the dark rectangle at the beginning of this tutorial) and set a new position



Create a new Excel file inside your "News" Folder and name it "5News"

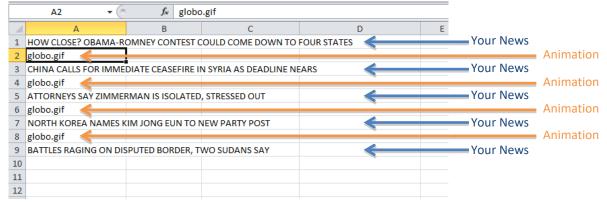


In this new crawl we are going to insert an animated globe between one news and the next one. We will copy our

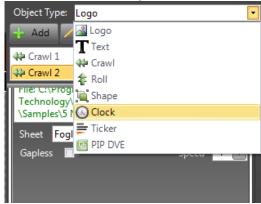
animation file (.gif, or .mov) inside the "NEWS" Folder.



Open the "5News.xlsx" file and start typing your text putting a piece of news for each line, alternate with the animation file



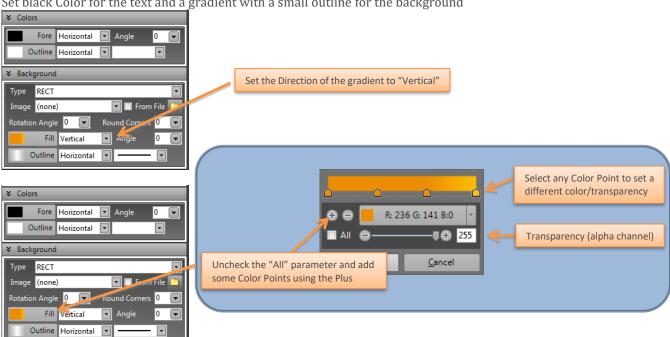
#### Create a new "Clock" object



#### Set "dd/MM hh:mm" Format and position

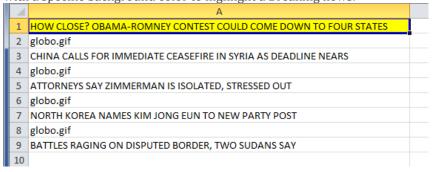


Set black Color for the text and a gradient with a small outline for the background



#### **SPECIAL FEATURE:**

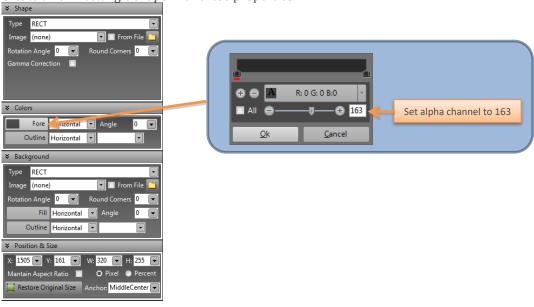
You can set a background color directly to the cells in the Excel file and show it on air. Any cell could be customized with a specific background color to highlight a Breaking news.



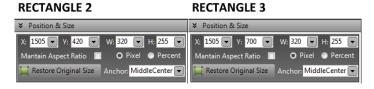
Now we are going to create the three "Ticker Boxes" that will appear on the side of the anchor woman!

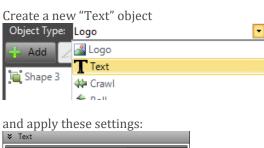


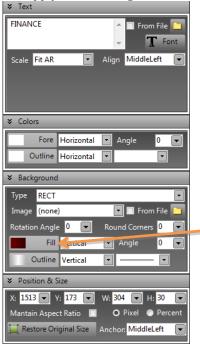
Create a new rectangle shape with these properties:



Copy and paste the same object twice and define positions

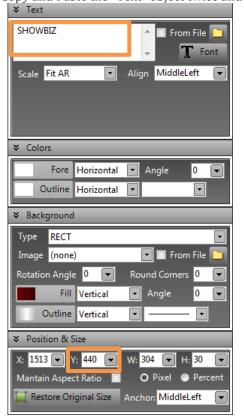


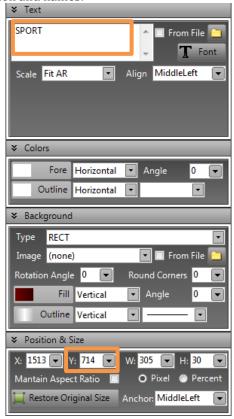




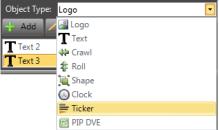


Copy and Paste the "Text" object twice and set new position and names:





Add a new "Ticker" object inside your page



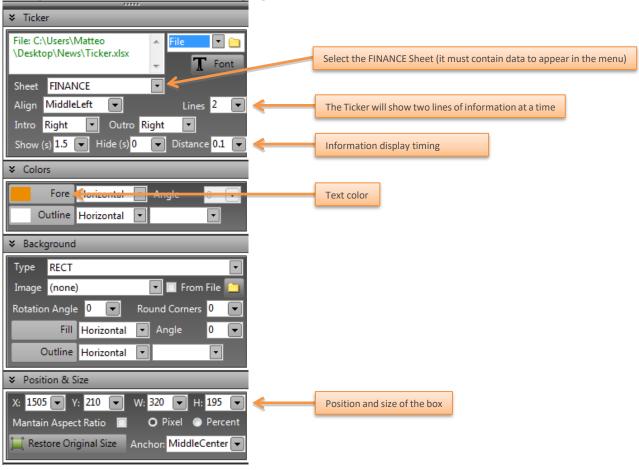
Create a new Excel file named "Ticker.xlsx" and save it in the "NEWS" folder



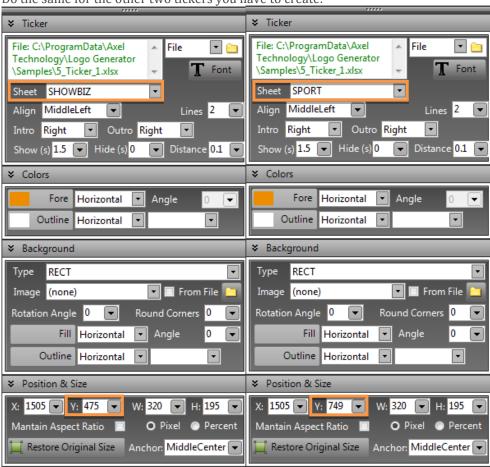
Open it and Create three different "Sheets": one for Finance, One for Showbiz and one for Sport



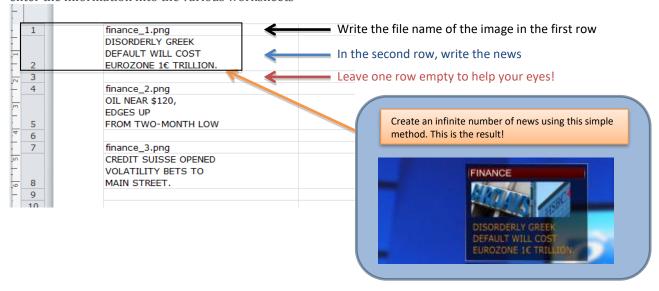
Select your "Ticker.xlsx" file and set these properties



Do the same for the other two tickers you have to create:



Copy the images you will use in your Ticker always into the "NEWS" Folder, then open your *Ticker.xlsx* file and enter the information into the various worksheets



Do the same for "Showbiz" and "Sport" categories.

Return to CG Plus and save the page. Your 24/7 graphics are ready! In the "Main" section you're now able to go on-air with a broadcast quality news template giving to your program an International Tv Network feeling.



#### 5 RESTORE

*CG Plus* machine is provided with a procedure for performing a FACTORY RESTORE on your device in case of need. **ATTENTION**: With this procedure, all your data in the C:\ drive will be erased, so we suggest to perform a backup copy of the data you want to save before starting with the restore.

After the restore, in the S:\ drive you will find the installation files and drivers for configuring again CG Plus' environment.

#### 5.1 PROCEDURE

When starting the device, you can choose between two options:

- Windows Embedded Standard (default)
- Axel Factory Restore

Select "Axel Factory Restore" and press [ENTER]: a window will appear with the disclaimer conditions and reminding you of making a copy of your data before performing the restore, please read all carefully.

Click on "Reboot" to restart the device and make a backup copy of your data, otherwise tick "I accept all disclaimer conditions" and click on "Restore".

A window will appear asking you to enter a password with the format "axelrestore XXXX", please contact Axel Technology's technical support who will provide a valid password.

Insert the password and click on OK to start the restore process.

#### 5.2 CG PLUS SETUP

Once the device has been restored, you can reinstall CG Plus with the installation file you find in S:\Setup\AxelUpdate.

Run the "CGPlusSetup.exe" file:

#### 5.3 HARDWARE KEY

CG Plus works with a USB hardware key plugged into the internal USB port of the device. **If the hardware key is not detected by the system, CG Plus will work on Demo Mode.**